

## Two new species of *Astragalus* L. sect. *Dissitiflora* DC. (Fabaceae) from Turkey

D. PODLECH & Z. AYTAÇ

### Abstract:

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Two new species of the genus *Astragalus* sect. *Dissitiflora* are described from Turkey. They are compared with their closest relatives. Line drawings of floral parts are presented.

### Zusammenfassung:

Zwei neue Arten von *Astragalus* sect. *Dissitiflora* aus der Türkei werden hier beschrieben. Sie werden mit ihren nächsten Verwandten verglichen. Strichzeichnungen der Blütenteile sind beigelegt.

### Introduction

The main distribution area of sect. *Dissitiflora* (syn.: *Xiphidium* Bunge) is in central Asia, where the section contains more than 100 species (GONCHAROV et al. in KOMAROV 1965). 10 species of this section were previously known from Turkey (CHAMBERLAIN & MATTHEWS 1970) and 12 from Iran (GHAHREMAN et al. 1996). Because of the low number of specimens studied for the treatment of *Astragalus* in the Flora of Turkey (most of the species were known from the type specimen plus one further collection), the discovery of new species for sect. *Dissitiflora* was to be expected.

### *Astragalus nigrifructus* Podlech & Aytaç, spec. nov.

Holotype: Turkey, C4 Konya, Ereğli, Ivriz, 1200–1300 m, 22.6.1997, *Aytaç 7600* (GAZI!; Iso: MSB!).

Fig. 1a.

Differt ab *A. aucheri* Boiss. foliolis 15–20 mm longis (nec 10–15 mm longis), calycis dentibus 2–3 mm longis, subulatis (nec ad 2 mm longis, triangularibus), petalis albidis (nec purpureis), legumine pilis albis nigrisque oblecto (nec pilis mere albis).

Plantae suffruticosae, ad 30 cm altae. Stipulae 2,5–3 mm longae. Folia 5–7 cm longa. Foliola 3 juga, 15–20 mm longa et 1,5–2 mm lata, linearis. Pedunculi 13–19 mm mm longi, dense ap-

presse albo pilosi. Racemi laxi, 6–10 flori. Calyx 11–12 mm longus, dentibus 2–3 mm longis. Petala albida. Vexillum 19–21 mm longum. Alae 18–19 mm longae, lamina 7–7,5 mm longa et 4 mm lata. Carina 15–16 mm longa. Fructus linearis, 40–50 mm longus, curvatus.

**Plants** c. 30 cm tall, suffruticose, with woody, densely branched base, covered by  $\pm$  symmetrically medifixed, warty, appressed hairs. **Stems** of the current year 7–10 mm long, ascending, very densely covered by white hairs of 0.5–0.8 mm length. **Stipules** brownish, 2.5–3 mm long, narrow triangular, very shortly adnate to the petiole to nearly free, densely white hairy outside. **Leaves** 5–7 cm long; petiole 1.5–2 cm long, together with the rachis slender, rather densely hairy like the stem. **Leaflets** in mostly 3 pairs, remote, linear to linear-lanceolate, 15–20  $\times$  1.5–2 mm, acutely tipped, densely furnished with white hairs 0.6–0.9 mm long. **Peduncles** 13–19 cm long, densely white hairy. **Racemes** loosely 6–10-flowered, in fruit somewhat elongated up to 8 cm long; axis white and black hairy. **Bracts** 1.5–2 mm long, narrowly ovate, acute, white and black hairy. **Pedicels** c. 1 mm long, predominantly black hairy. **Calyx** 11–12 mm long, tubular, obliquely gibbous at base, slightly obliquely cut at the orifice, densely covered by subappressed, mostly asymmetrically white hairs 0.8–1 mm long and with appressed somewhat shorter and symmetrically medifixed black hairs; teeth subulate, 2–3 mm long, hairy on inner side. **Petals** whitish. **Standard** 19–21 mm long; blade slightly upcurved in upper part, with unfolded margins, broadly ovate to nearly orbicular, 11 mm wide, deeply emarginate at the apex,  $\pm$  angularly passing into the cuneate claw. **Wings** 18–19 mm long; blades obovate, obtuse at the apex, 7–7.5  $\times$  4 mm; auricle very short; claw 11–12 mm long. **Keel** 15–16 mm long; blades obliquely obovate, with rectangularly curved lower edge and straight upper edge, subacute at the apex, 5.5  $\times$  3 mm; auricle minute; claw 9.5–10.5 mm long. Staminal tube straightly cut. **Ovary** with a stipe c. 1 mm long, linear, appressed hairy; style thick, glabrous. **Pods** subsessile, spreading, linear, slightly upcurved, 40–50 mm long, c. 2 mm high and wide, ventrally carinate, dorsally grooved, acuminate at the apex with a slender beak 2–5 mm long; valves furnished with asymmetrically medifixed, nearly appressed white and black hairs. **Seeds** unknown.

The new species is closely related to *A. aucheri* Boiss. from which it differs by longer leaflets and longer, subulate calyx teeth, by the whitish and not purplish petals. The pods are covered by white and black hairs, in *A. aucheri* only by white hairs.

***Astragalus beypazaricus* Podlech & Aytaç, spec. nov.**

Holotype: Turkey, Ankara, 12 km from Beypazari to Nallihan, 600 m, 2.7.1997, *Aytaç 7610*, (GAZI; Iso: MSB).

Fig. 1b.

Differt ab *A. subuliformis* DC. (syn.: *A. subulatus* Pall., nom. illeg.) stipulis 1–1,5 (nec ca. 4 mm) longis, bracteis 1–1,5 (nec ca. 3 mm longis), calyce 7–10 mm (nec 10–12 mm) longo, fere mere albidipiloso (Nec albi-nigripiloso), legumine ad 4 cm (nec 5–7 cm longo; ab *A. nigri-fructuo* stipupulis et foliolis minoribus, foliis anguste ellipticis vel anguste obovatis (nec linearibus), petalis violaceis (nec albidis) et legumine breviore.

Plantae suffruticosae, ad 30 cm altae. Stipulae 1–2 mm longae. Folia 2–3 cm longa. Foliola 3–4 juga, 4–8 mm longa et 1–2 mm lata, anguste elliptica vel anguste obovata. Pedunculi 8–12 cm longi, dense appresse albi-pilosi. Racemi laxi, 8–13 flori. Calyx 7–10 mm longus, dentibus 1–2 mm longis. Petala violacea. Vexillum ca. 21 mm longum. Alae ca. 18 mm longae, lamina 7 mm longa et 3.8 mm lata. Carina ca. 16 mm longa. Fructus linearis, 15–40 mm longus.

**Plants** c. 30 cm tall, suffruticose, with woody, densely branched base, covered by  $\pm$  symmetrically medifixed, warty, appressed hairs. **Stems** of the current year 4–8 cm long, ascending, very densely covered by white hairs 0.5–0.8 mm long. **Stipules** brownish, 1–1.5 mm long, narrowly triangular, nearly free from petiole, densely white and black hairy outside. **Leaves** 2–3 cm long; petiole 0.4–0.5 cm long, together with the rachis slender, densely hairy like the stem. **Leaflets** in 3–4 pairs, remote, narrowly elliptic to narrowly obovate, 4–8  $\times$  1–2 mm, acute to more rarely rounded at the apex, sparsely hairy on upper side, loosely to densely hairy on lower side, flat or somewhat infolded at the margins. **Peduncles** 8–12 cm long, sulcate, loosely furnished with white hairs. **Racemes** loosely 8–13 flowered, in fruit 2–8 cm long; axis at fruiting time sparsely hairy. **Bracts** 1–1.5 mm long, whitish, narrowly triangular, acute sparsely white and black hairy. **Pedicels** c. 2 mm long, white and black hairy, recurved, somewhat thickened at fruiting time. **Bracteoles** minute, 0.2–0.4 mm long, inserted in the upper part of the pedicel. **Calyx** 7–10 mm long, tubular, obliquely gibbous at the base, slightly obliquely cut at the orifice, loosely to rather densely covered by subappressed, mostly asymmetrically medifixed white hairs and sometimes also with few black hairs; teeth triangular, 1–1.5 mm long. **Petals** bluish-violet. **Standard** c. 21 mm long; blade slightly upcurved in the middle, obovate, c. 9 mm wide, deeply emarginate at the apex, slightly constricted below the middle, angularly passing into the claw. **Wings** c. 18 mm long; blades obovate, rounded at the apex, 7  $\times$  3.8 mm; auricle c. 0.5 mm long, claw 11 mm long. **Keel** c. 16 mm long; blades obliquely elliptic-triangular, with broadly and rectangularly curved lower edge and nearly straight upper edge, subacute at the apex, 5.5  $\times$  3 mm; auricle minute, claw c. 11 mm long. **Staminaltube** straightly cut. **Ovary** with a stipe c. 1.5 mm long, appressed hairy; style thick, glabrous. **Pods** with a stipe c. 3 mm long, spreading or slightly pendulous, linear, straight to slightly upcurved, 15–28 mm long, 2–2.5 mm high and wide, ventrally obtusely carinate, dorsally widely grooved, acuminate at the apex with a beak 2–2.5 mm long, bilocular; valves furnished with asymmetrically medifixed, subappressed white hairs up to 1 mm long and with distinctly shorter, nearly symmetrically medifixed black hairs. **Seeds** unknown.

**Turkey.** **Ankara:** 12 km from Beypazari to Nallihan, 600 m, 2.7.1997, *Aytaç 7616* (GAZI) – *ibid.*, 26.5.1997, *Aytaç 7542* (GAZI).

*A. beypazaricus* is closely related to *A. subuliformis* DC. (syn.: *A. subulatus* Pall., nom. illeg.), but differs by shorter stipules and bracts. Moreover, the pods in this new species are much shorter than those of *A. subuliformis*. From *A. nigrifructus* it is distinguished by the nearly exclusively white hairy calyx, the shorter and wider leaflets which are only sparsely hairy on upper side, the presence of minute bracteoles, shorter calyx teeth and the bluish violet (not whitish) petals.

## References

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Prof. Dietrich Podlech, Institut für Systematische Botanik der Universität München, Menzinger Str. 67, D-80638 München, Deutschland.  
Z. Aytaç Gazi Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, 06500 Teknikullar, Ankara, Türkiye.

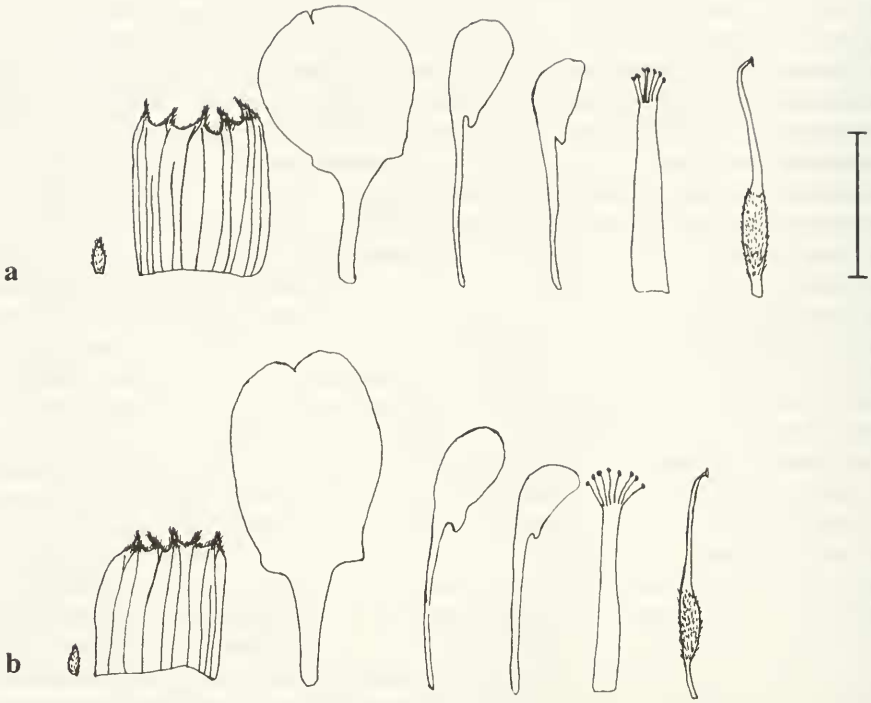


Fig. 1: Line drawing of floral parts of a: *A. nigrifructus* (Aytaç 7600, MSB) and b: *A. beypazariensis* (Aytaç 7542, MSB). From left to right: bract, calyx, standard, wing, keel, stamens, ovary. Scale bar: 1 cm.